



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventor(s)/	Brian J. Schwartz, Robert N. Davie,	Group Art Unit:	3723
Appellants:	Jr., Bernard D. Vaillette, Jon C. Hammett, Allan B. Packman, Timothy L. Brown, James D. Campbell, Jr.		
Assignee/ Real Party in Interest:	United Technologies Corp.	Examiner:	H. Shakeri
Title:	COOLANT NOZZLE		

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**Reply Brief under 37 CFR 41.41(a)(1)**

This Reply Brief is submitted in reply to the Examiner's Answer dated November 18, 2007.

***Status of claims*** - The claims are as listed in the amendment mailed April 20, 2006 and as set forth in the Appendix accompanying the Appeal Brief of August 13, 2007. Claims 1-8, 10, 11, 13-16, and 18-26 were pending in the application. Claims 1-8, 10, 11, 13-16, and 18-26 were rejected. No claims were merely objected to and no claims were allowed. Claims 1-8, 10, 11, 13-16, and 18-26 are on appeal.

***Grounds of rejection to be reviewed on appeal -***

There are five (5) grounds of rejection to be reviewed on appeal as follows:

Ground 1 – The 35 U.S.C. 102 rejection of claims 10, 11, and 13-15 as being anticipated by DE 202 16 396.

Ground 2 – The 35 U.S.C. 103 rejection of claims 1-11 (believed 1-8, 10, and 11), 13-16, and 18-26 as being unpatentable over U.S. Patent 6,471,573 of Reitmeyer.

Ground 3 – The 35 U.S.C. 103 rejection of claims 10, 11, and 13-15 as being unpatentable over Reitmeyer in view of DE'396.

Ground 4 – The 35 U.S.C. 103 rejection of claims 1-9 (believed 1-8), 16, and 18-26 as being unpatentable over Reitmeyer in view of Perkins et al.

Ground 5 – The 35 U.S.C. 103 rejection of claims 1-9 (believed 1-8), 16, and 18-26 as being unpatentable over DE '396 in view of Perkins et al.

## **Argument**

### **Ground 1 - Claims 10, 11, and 13-15 are not anticipated by DE 202 16 396.**

#### **Claim 10**

Claim 10 identifies the presence of an elongate abrasive bit. There is no suggestion for DE '396 having such an elongate bit. DE '396 involves a polishing disk for polishing the edges of flat glass panels. Accordingly, DE '396 cannot anticipate claim 10. The assertion of an elongated bit totally vitiates the term and is unreasonably inconsistent with interpretation in the art.

A prior Office action isolated the non-abrasive shaft of the polishing disk and ignored the non-elongate polishing portion. Asserted elongatedness of the shaft was unreasonably asserted as an elongate bit. The final Office action at ¶3 of page 2, however, identifies the disk 14/16. This is repeated at ¶11 where it is asserted that the combined shaft and disk length is greater than the disk diameter. One of ordinary skill in the art would regard element 14, 16 as a disk and not reasonably as an elongate abrasive bit. There is no specific suggestion for use with an elongated tool and assertions of inherency are unsupported. It is unreasonable to assert the combination as an elongate bit. No sufficient explicit reason has been articulated for any further modification to use an elongate bit. The ¶11 assertion of possible use in a milling tool does not inherently disclose or suggest an elongate bit. A milling tool is not inherently elongated.

#### **Claims 10 and 11**

Although the FIG. 11/12 embodiment was cited against base claim 10, the two apparent groups of outlets 26' and 26" in DE'396 FIG. 12 are at different radial positions as shown in Ex. 1. This precludes both groups being applied to the claims and the "no other" element of claim 10 precludes the possibility that only one of these two groups is applied while the other is ignored. Accordingly, DE '396 all the more cannot anticipate claim 11.

The ¶11 assertion that the "no other" and "common radial position" elements could be satisfied by the 11/12 embodiment are wrong. Such interpretation involves selecting one group of outlets 26' or 26" and ignoring the other (an error repeated at page 7 of the Answer). The claim elements preclude such ignoring. In the final Office action, however, FIG. 8 also was cited as having a single group of outlets against claim 11. However, the disk 16 of that figure is clearly even more distinguished from an elongate bit as noted above.

In the Response to Argument section (10) of the Answer, starting at the last line of page 6, US6739959 of Bodenmiller et al. was cited as teaching an elongate bit which the Office then

purports to combine with DE'396. This is a new ground of rejection which should be stricken or expressly designated as such and be subject of a remand wherein Applicants/Appellants will be provided full opportunity to respond. Appellants, however, note that the rejection is clearly deficient. Bodenmiller et al. involves particular machining of a particular product (e.g., dental prostheses). No motivation or other reason has been appropriately articulated for the combination with DE'396. Interestingly, the Bodenmiller et al. reference is machining of a "ceramic" compact. Perhaps this further evidences the hindsight keyword reconstruction nature of the entire examination.

In the Response to Argument section (10) of the Answer, starting at line 5 of page 7, it was asserted that "Appellant chooses to pick the embodiment of Figs. 11 and 12 to argue..." However, Appellants merely note that the Office action was unclear as to which embodiment was being applied against the claims.

In the Response to Argument section (10) of the Answer, at the paragraph extending from the fourth from last line of page 7 to the fourteenth line of page 8, further unsupported statements are made regarding Reitmeyer. In particular, there are unexplained modifications of Reitmeyer to multiply the number of outlets and provide the claimed spacing. The passage ends with the statement "This modification would not destroy the reference as it clearly suggests modifications with regards to number and arrangements of the outlets." The question is of course begged: what is the actual nature of the modification? It is one thing to say words, but an entirely different thing to envision an actual nozzle. What is the physical form of the modified nozzle? Without this information, Appellants are not in a position to comment further on what aspects of the reference(s) would be destroyed by such a modification.

#### Claim 14

The non-elongatedness of the DE'396 disk does not raise issues associated with an elongate bit. Thus, it does not disclose or suggest the lengthwise coverage of claim 14. For example, the angling of DE'396 may be selected merely for delivery and not for a longitudinal extent of coverage. If an elongate bit were inserted into the DE'396 nozzle, there is no indication that there would be the claimed coverage. In the penultimate sentence of the paragraph spanning pages 6 and 7 of the Answer, a new interpretation of claim 14 has been offered. The Office now says that, because Applicant did not use the term "entire", any partial coverage in the references is anticipatory. However, this is at odds with and vitiates the claim's reference to "total"

coverage, common and ordinary usage, usage in the specification, and prior interpretation. On remand, Appellants would be pleased to add the term "entire" if required.

Claim 15

Again, the difference in situations between the polishing disk and an elongate bit highlights that DE'396 does not disclose or suggest the redundancy of coverage. Again, the Answer appears to ignore the difference between a disk and an elongate bit in the final sentence of the paragraph spanning pages 6 and 7.

**Ground 2 - Claims 1-11 (believed 1-8, 10, and 11), 13-16, and 18-26 are not unpatentable over U.S. Patent 6,471,573 of Reitmeyer**

Claims 1, 10, 16, and 20

Reitmeyer discloses a nozzle attached to a die grinder-type apparatus. The nozzle appears to be a machined metallic assembly and has a small number of outlets in a small radial sector adjacent to the grinding bit (see Ex. 3). They are fed by a single straight bore/plenum shown at 28 and covering a correspondingly small sector. It does not disclose the claimed outlet distribution or coverage. For example, independent claims 1 and 10 specifically reference a minimum "gap" between outlets which is greatly exceeded by the large clear sector of Reitmeyer in which there is no coverage. Independent claim 20 similarly identifies a "spacing". Slightly differently, independent claim 16 identifies the one or more passageways along essentially an entire circumference of the quill (e.g., an internal plenum feeding the outlets). Its dependent claim 19 identifies the at least five outlets which is the number associated with the angular separation of claims 1, 10, and 20.

The Answer, initially in the sentence spanning pages 3 and 4, repeats the improper interpretation of the 72° limitation. However, the next sentence repeats the sentence spanning pages 3 and 4 of the final Office action, asserting that Reitmeyer recited "any desired number of such outlet ports... may be located in any desired positions..." so as to apparently assert obviousness of the limitation as properly interpreted. However, the Office's position mistakenly treats this passage as if it had disclosed all possible numbers and positions of outlets. This error is repeated in the Answer from the fourth from last line of page 7 through the fourteenth line of page 8. The Answer then goes on to discuss "such modification", "[T]his modification", and the like, merely highlighting the fact that the exact nature of the modification had never been

articulated. The assertions of predictability or skill in the art are misdirected. Clearly, presented with the teachings of Applicants/Appellants, one could manufacture a nozzle having the claimed parameters. However, there has been no reasonable basis argued to make a modification of Reitmeyer to result in the claimed nozzle. Clearly, Reitmeyer might enable some scope of variations beyond its particular illustrated embodiment. However, there is no suggestion that it would enable or otherwise render obvious the presently-claimed invention. For example, the particular machined assembly nature of Reitmeyer clearly mitigates against a full circumferential distribution. For example, how would the bore/plenum 28 feed all the outlets? A much more comprehensive reengineering would be required.

There is also no indication that a fuller circumferential distribution would not destroy the basic functionality of Reitmeyer. For example, Reitmeyer's bit may be exposed for grinding in the large sector opposite the group of three outlets. A full circumferential distribution would block this access of the workpiece to the bit.

It was asserted that the changed shape involves only routine skill in the art. There is no support for this erroneous statement. Furthermore, the citation to *In re Stevens* is irrelevant because *Stevens* does not support that proposition. *Stevens* dealt with an adjustable angle handgrip for a fishing rod. There is no support for the erroneous assertion that one would make the claimed shape changes merely based upon workpiece parameters. For example, there is no indication that the claim distribution would be within a range associated with a normal variation in workpiece parameters.

At ¶12 of the final Office action, several errors were made. First, disagreement was taken with Appellants' characterization of the Office's position as Reitmeyer "discloses all numbers and positions" of outlets. Ignoring the substance, the Office asserted that the form of such a rejection would have been anticipation rather than obvious. Clearly, the substance remains erroneous (e.g., that Reitmeyer would suggest or otherwise render obvious all numbers and positions).

In that same paragraph, the hypothesized modification of "10 [outlets] in the same arrangement as disclosed... would meet the limitation of the outlets not being positioned more than 72 degrees." However, this is clearly wrong. For example, a ten outlet configuration might just as well be achieved by using the same small sector but spacing the outlets circumferentially closer together. Alternatively, a slightly larger circumferential extent could be used. However, a more full circumferential array leaving no gap of more than 72° is clearly at odds with the

manufacturing techniques, etc. of Reitmeyer as noted above. Such would require more than a routine experimentation.

Also, the more full circumferential nature of the present outlets is clearly a fundamental departure from what Reitmeyer pursued.

Claims 1, 16, and 20

Claims 1, 16, and 20 identify a sintered nozzle body. Dependent claim 18/16 further identifies the body as a sintered ceramic. The sintered structure is not disclosed or suggested by Reitmeyer. In the second full paragraph of page 4 of the Office action, it was asserted that:

"sintered body, is not germane to the issue of patentability of the device itself. However, sintering to make the device last longer and/or to protect it against corrosion, is known in the art and such modification would have been well within the knowledge of one of ordinary skill in the art."

This erroneous statement is without substantiation and citation.

This error by the Office was repeated in the first full paragraph of page 4 of the Answer and revisited at page 8, line 14-page 9, line 8 of the Answer. In the latter, it was asserted as being "unclear how it structurally further limits the article itself, as it appears to be a method of forming..." Appellants note MPEP 2113 and *In re Garner*, 412 F.2d 276, 162 USPQ 221 (CCPA 1979) supporting structural interpretation. The citation to *In re McLaughlin* is unsubstantiated. This is clearly the epitome of hindsight reconstruction. What is the actual motivation? The Office action and Answer seem to ping pong between unsupported assertions of temperature resistance, wear resistance, corrosion resistance, and the like without ever relating these (individually or in combination; absolutely or relative to other materials) to a specific proposed use.

There is no indication that one of ordinary skill in the art would provide Reitmeyer with a sintered body (and none that Reitmeyer's structure would be sinterable), let alone that the sintered body would either make Reitmeyer last longer or protect it against corrosion in the Reitmeyer use (see Perkins et al. discussed below). If anything, the opposite would be the case. Where is the expectation of such properties for the Reitmeyer use (or any other use) found? There is further no suggestion for the sintered ceramic.

The argument in the first full paragraph of page 8 of the final Office action is clearly hindsight. By what evidence is it asserted that a sintered body would have "higher strength" than



the material Reitmeyer used? There is similarly no suggestion that it would be otherwise more durable and/or protect against corrosion (see Perkins et al. discussion below). This is totally hindsight. As is already in the record, the sintered material was selected by the present Appellants for advantageous manufacturing considerations in spite of structural weaknesses which would have been expected by one of ordinary skill in the art. There would have been no expectation of structural advantages, let alone those hypothesized.

As is discussed further below, the only cited basis for the asserted properties of sintering is Perkins et al. This is clearly distinguished below. There is no reasonable basis for asserting one of ordinary skill in the art would find a sintered body had advantageous properties relative to the apparently machined Reitmeyer body.

#### Claim 2

Claim 2 expressly identifies the body as being a single unitary piece. If the Board were, for some reason, to not give weight to the sintered body limitation discussed above, the single-piece limitation becomes relevant. There is no suggestion in Reitmeyer for this construction.

In the Answer's Response to Argument (10) section in the first full paragraph on page 9, the implausible statement is made apparently relative to Reitmeyer: "The nozzle of prior art is a single unitary piece, it is a single piece (the single piece limitation would be met even by separate pieces attached or coupled together) and it is unitary as it forms one unit." This is a total vitiation of the term, inconsistent with common and ordinary usage, inconsistent with usage in the art, and inconsistent with usage in the specification. It defies common sense to assert that a single piece limitation would be met by an assembly of separate pieces. The term "single piece", was so interpreted in the context of a claim element of "single piece construction" in *W.E. Hall Co. v. Atlanta Corrugating LLC*, 370 F.3d 1343, 1350-53, 71 USPQ2d 1135, 1140-42 (Fed. Cir. 2004).

#### Claim 3

Claim 3 identifies a plenum surrounding the aperture. Clearly, the straight plenum/bore 28 does not surround by any reasonable definition.

#### Claim 4

As noted above, the clearly asymmetric Reitmeyer situation does not give one reason to adopt a symmetric situation.

#### Claim 7

This claim identifies at least five outlets and a single inlet. The five outlets element is believed redundant with claim 1 but was left in because earlier interpretations by the Office failed to properly weigh the identification of "no gap... being more than 72°" Accordingly, it is believed patentable for the same reason as claim 1 but may become relevant if the Office revisits its interpretation.

#### Claim 13

As noted above, the limited sector of the reference does not suggest the full 360° extent.

#### Claims 15 and 16

Reitmeyer's FIG. 4 clearly shows that it is not the particular workpiece configuration that keeps Reitmeyer's coverage to a small non-redundant circumferential extent. No part of the workpiece is shown blocking the remaining area of the circumference. Thus, there is not the particular redundant coverage of claim 15 ("around the entire circumference") or the general redundant coverage of claim 16 (identifying "passageways along essentially an entire circumference of the quill...") because there is a large sector not addressed by any of Reitmeyer's sprays (claim 15) and the plenum 28 extends only along a small sector (claim 16).

#### Claim 18

Regarding claim 18 (erroneously asserted as 19 in both the final Office action and Answer), the Office action cited *In re Leshin*. However, *Leshin* is inapposite. *Leshin* involved a claim to a molded plastic container. Although one reference was a metal container, a second reference was plastic: "...Anderson shows a similar container of molded plastic and applicant concedes that the plastics he uses are well known..." 125 USPQ 417. In the present case, there is no similar sintered coolant nozzle to that presently claimed. There is no suggestion that one of ordinary skill in the art to which the present invention most closely pertains would have selected a sintered material generally, or a sintered ceramic particularly. There is no basis for asserting that the material has known or otherwise obvious suitability and is within the reasonable domain of design choice. No reason is found and none has been explicitly articulated. Only partial articulation is found relative to Perkins et al. discussed below.

#### Claim 21

Claims 21 and 22 further define the bit as a quill and identify properties thereof. Claim 21 uses the term "superabrasive quill". Claim 22, on the other hand, also depends from claim 20 and

identifies "a doubly convex head portion and a distal shaft portion which have an abrasive coating or embedded abrasive particles." In the paragraph spanning pages 8 and 9, it was asserted that the Reitmeyer bit discloses an abrasive quill. However, this vitiates the distinction between the generic term bit and the claimed "elongate superabrasive quill". That paragraph erroneously identifies claim 22 instead of claim 21 as identifying the term "superabrasive quill". The terms "superabrasive" and "quill" and their combination are terms of art which would not be reasonably regarded as describing the die grinding bit of Reitmeyer.

In the third full paragraph of page 4, the Office action further bootstraps a previously made argument. There is no indication that Reitmeyer discloses the use of an element superabrasive bit.

Reitmeyer's die grinding bit would not reasonably be regarded as a quill.

#### Claim 22

In that same Office action paragraph spanning pages 8&9, it was erroneously recited that claim 22 did not recite structure to read over Reitmeyer. Although the generic reference to superabrasive quill is believed to read over as one of ordinary skill in the art would understand, the particular claim 22 reference to doubly convex head portion and distal shaft portion having an abrasive coating or embedded abrasive particles distinguishes Reitmeyer. The prior art fails to suggest the nozzle in combination with such a quill.

The Answer further extends the rejection. In the penultimate line of page 9, the Answer asserts: "The claim is rejected over Reitmeyer under obviousness rejection." This appears to invoke an unmade rejection combining an unspecifiably modified Reitmeyer with a prior art superabrasive quill. No sufficient reason has been articulated for this. If such a new rejection is to be made, it should be express and designated as such remand is appropriate. That same paragraph on page 10 of the Answer further bootstraps the fact that others of Appellants' claims are not so limited as implying that any machining bit would render use with a superabrasive quill as obvious. There is no support for this. The citation to column 2 of Reitmeyer does not thereby render all hypothetical modifications as being obvious.

**Ground 3 - Claims 10, 11, and 13-15 are not unpatentable over Reitmeyer in view of DE'396**

This is merely a hindsight reconstruction of the present invention. The arguments above regarding the asserted obviousness of outlet distribution also apply here. Furthermore, this rejection further highlights the impropriety of that rejection. The attempted modification of Reitmeyer, if possible, would greatly increase Reitmeyer's already high complexity and manufacturing cost. This is evidenced by the number of parts and machining steps required just to provide the three outlets of Reitmeyer. It would have to be absurdly complex to implement the outlet distribution of DE'396 in the Reitmeyer nozzle.

The final Office action ¶13 asserted "motivation provided at least by the base reference" is clearly improper. The base reference does not teach (or give other reason to adopt) so extreme a modification of its own embodiment. If anything, it teaches away therefrom. This further confirms the non-obviousness of the present invention.

The Answer at the second full paragraph of page 5 asserted that it would have been obvious "to modify the invention of Reitmeyer with more outlet ports as taught by DE'396, in adapting the device for a particular application." Again, what is the nature of the modified Reitmeyer nozzle? What is the motivating "particular application"? It is one thing to say in words: take Reitmeyer and provide a nozzle with full 360° coverage, no gap greater than 72°, etc. It is another thing to envision the form that modified nozzle would take. The failure to articulate this clearly has deprived Appellants of the ability to respond on several levels. A basic level involves implausibilities of the specific configuration (e.g., need to add additional features, defeating asserted purposes/functions, and the like). In a second level, it will likely turn out that the combination articulated to anticipate a broad claim effectively heads away from and highlights the further patentability of Applicants/Appellants narrower claims.

This is not merely a case of applying a recent development already used to modify one similar device to similarly modify another. "Applying modern electronics to older mechanical devices has been commonplace in recent years." *Leapfrog Enterprises Inc. v. Fisher-Price Inc.*, \_\_\_ F.3d \_\_\_, \_\_\_, 82 USPQ2d 1687, 1691 (Fed. Cir. 2007). "There then was a marketplace creating a strong incentive to convert mechanical pedals to electronic pedals, and the prior art taught a number of methods for doing so." *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, \_\_\_, 127 SCt 1727, \_\_\_, 167 LEd2d 705, \_\_\_, 82 USPQ2d 1385, 1390 (U.S. 2007).

The present case is clearly distinguished for example from that of *KSR* and *Leapfrog*. The present inventors have not simply modified one nozzle in a similar way to which the recent prior

art has modified similar nozzles. To a great extent, *KSR* and *Leapfrog* deal with obvious subject matter wherein the obviousness arose too recently for a convenient anticipatory reference to be found. Neither reference represents a recent background change in technology as in the automation trends of *KSR* and *Leapfrog*. If there was a reason to have made the modification, it would have been made (e.g., in lieu of the actual configurations of the references).

In the Answer's Response to Argument section (10), in the first full paragraph of page 10, it appears to be asserted that because Reitmeyer indicates other configurations are possible that this suggests all conceivable combinations with all conceivable additional references even without the necessity to articulate the nature of such combination. This is improper.

**Ground 4 - Claims 1-9 (believed 1-8), 16, and 18-26 are not unpatentable over Reitmeyer in view of U.S. Patent 4,252,768 of Perkins et al.**

Claims 1, 10, 16, and 20

Perkins et al. is asserted only for material and therefore does not cure the Ground 2 rejection based only upon Reitmeyer. It, for example, does not cure the deficiencies regarding the outlet distributions of independent claims 1, 10, 16, and 20 and their dependent claims. Oddly, the "sintered body, number of outlets, the size, and the types of the bit" were asserted in ¶7 of the final Office action (repeated in the final paragraph of page 5 of the Answer) as obvious modifications "in view of Perkins et al. and depending on the intended use, workpiece/operational parameters..." This is odd because Perkins et al. discloses a single outlet sandblasting nozzle rather than a multi-outlet coolant nozzle used with a bit. Such a modification is more extreme than routine workpiece/operational parameters.

Claim 2

Perkins et al. does not cure Reitmeyer's lack of the claim 2 single piece structure

Claim 3

Perkins et al. does not cure Reitmeyer's lack of the claim 3 plenum.

Claim 4

Perkins et al. does not cure Reitmeyer's lack of the claim 4 symmetry.

Claim 7

Perkins et al. does not cure Reitmeyer's lack of the claim outlet count.

Claim 16

Perkins et al. does not cure Reitmeyer's lack of the claim 16 coverage.

Claim 21

Perkins et al. does not cure Reitmeyer's lack of the claim 21 quill.

Claim 22

Perkins et al. does not cure Reitmeyer's lack of the claim 22 bit structure.

Claim 25

Perkins et al. does not cure Reitmeyer's lack of the claim 25 plenum and trunk structure.

Claims 1, 16, and 20

Claims 1, 16, and 20 and their dependent claims identify a sintered nozzle body.

Dependent claim 18/16 further identifies the body as a sintered ceramic. Perkins et al. discloses a very specific construction of a sandblasting nozzle. The Perkins et al. nozzle has a core and a separate casing. The core material is a ceramic composite having a composition selected for properties including high temperature oxidation resistance, high strength, high abrasion resistance, high resistance to thermal shock, and the like. Col. 3, lines 26-63. The Perkins et al. delivery of a high temperature sandblasting medium is substantially different from both the Reitmeyer nozzle on the one hand and the present coolant nozzle on the other hand. There has been no properly cited motivation as to why one of ordinary skill in the art would so modify Reitmeyer or otherwise attempt sintered material use in a coolant nozzle.

There is no suggestion for the proposed combination. This is merely a hindsight reconstruction. There is no suggestion that one of ordinary skill in the art would seek Perkins et al. or, if presented with Perkins et al. choose any modification based thereon. Perkins et al. involves considerations particular to sandblasting nozzles and not coolant nozzles. The ceramic core of Perkins et al. appears chosen for interfacing with the sandblasting medium which requires abrasion resistance and high temperature resistance. There is no suggestion that these properties are more desirable for coolant use of Reitmeyer than are Retimeyer's materials. There is no suggestion to use it for coolant.

There is furthermore no suggestion that one, if using Perkins et al., would make the claimed nozzle as a single piece. For example, if molded, one would effectively duplicate the multiple pieces of Reitmeyer with multiple ceramic pieces, potentially needing further housing structure to hold them together. There is no indication that the single piece nature of the Perkins

et al. core (as distinguished from the nozzle of Reitmeyer) would be preserved in making more complex structure.

At ¶14, the final Office action cites *In re McLaughlin*. However, the examiner clearly obtained Perkins et al. based upon hindsight in view of Appellants' own disclosure. For example, the present application has search subclasses within classes 408, 409, and 451 whereas Perkins et al. is classified under 264 and 501. Clearly, Perkins et al. arose purely from a hindsight keyword search. No motivation or other reason has been suggested as to why someone in the cooling nozzle art would go to the sandblasting nozzle art. The assertion that "Perkins et al. clearly teaches using sintered ceramic for durability and/or to protect against corrosion" is, even if correct, limited to the sandblasting art and does not suggest advantageous performance in the cooling nozzle art. Because these are different arts and different physical situations/problems, there is no reason to combine.

*KSR* and *Leapfrog*. are distinguished as noted above relative to Ground 3.

Furthermore, the present secondary reference Perkins et al. is clearly nonanalogous to the primary reference. This is clearly different from *KSR* and *Leapfrog*. wherein similar modifications are found in analogous references for analogous purposes. The Perkins et al. use in high temperature sandblasting is not properly analogized to the cited coolant nozzles or the present nozzle.

The present secondary reference (more particularly the elements/teachings for which it is cited) is also not particularly recent (1981). Thus, the art has had more than sufficient time to have adopted those elements/teachings but has not done so. The Office action did not identify a recently-arisen prior art need that would similarly give reason for the modification.

The Answer only muddies the waters. In the last full sentence of page 10, Perkins et al. was asserted as suggesting "the use of sintered ceramic for its high resistance to abrasion/corrosion for other aggressive applications." In the next sentence the Answer hypothesizes "if a nozzle as disclosed by Reitmeyer utilized in highly corrosive/abrasive environment were subject to corrosion/abrasion itself, the problem may be cured using sintered ceramic body." Again, this begs the question of the nature of the combination. What is being sprayed in what environment for what purpose? Is sandblasting medium being sprayed against the bit of Reitmeyer in the combination?

The assertion starting at line 4 of page 11 is confusing. Is this a repetition of the Office's error regarding "single piece" noted above or is it an assertion that one would eliminate the other components from the combination? There is no indication that a core alone would satisfy various claim limitations. However, if a specific core configuration is articulated, Applicants/Appellants will be in a better position to address this.

No basis has been provided for the assertion of pertinence "to the particular problem with which the applicant was concerned..." as asserted in the middle of page 11 of the Answer. The assertion that the sandblasting nozzle and cooling nozzle would be subject to the same problem/solution is unsupported. Citation to *In re Wright* is inapposite. First, the Office action and Answer themselves effectively assume a long-felt unsatisfied need. Second, Wright dealt with a combination of known elements in the exact same art as a design choice. The present combination of elements drawn from distinct arts presents a much different situation. Third, the present situation is far more complex than a drop-in substitution.

The paragraph spanning pages 11 and 12 of the Answer in the first sentence initially repeats the overreaching assertions of intended use and in the final sentence finally repeats the improper arguments regarding "single piece". In the middle sentence, it is asserted: "The structure regarding the plenum and tank [trunk?], the 'acute' angle as cited in claim 26 and the sintered body, are met by the combination." Again, the exact nature of the combination has never been articulated so Applicants/Appellants are not in a position to more fully rebut this.

**Ground 5- Claims 1-9 (believed 1-8), 16, and 18-26 are not unpatentable over DE '396 in view of Perkins et al.**

This rejection suffers from the same deficiencies as do the underlying DE '396 rejection and the Reitmeyer in view of Perkins et al. rejection of Ground 1. As noted above relative to Ground 4, Perkins et al. is only asserted for material and thereby, does not cure the failure of DE'396 to disclose additional elements.

**Claim 8**

Perkins et al. does not cure DE '396's lack of the claim 8 size.

**Claim 16**

Perkins et al. does not cure DE '396's lack of the claim 16 quill.

**Claim 21**



Perkins et al. does not cure DE '396's lack of the claim 21 quill.

Claim 22

Perkins et al. does not cure DE '396's lack of the claim 22 bit structure.

Claim 25

Perkins et al. does not cure DE '396's lack of the claim 25 plenum and trunk structure.

Claim 25

Perkins et al. does not cure DE '396's lack of the claim 26 angles.

Claims 1, 16, and 20

Claims 1, 16, and 20 and their dependent claims identify a sintered nozzle body.

Dependent claim 18/16 further identifies the body as a sintered ceramic.

It was merely asserted that "DE '396...in view of Perkins et al. further modified in light of combination with known tools, depending on the intended use, as indicated above meets all the limitations." Final Office action, page 5; Answer, page 6, second paragraph. Again, this is thoroughly conclusory and without support. As with the other obviousness rejections, there is a substantial degree of bootstrapping in first unsupportably proposing a combination that yields a portion of the invention and then vaguely asserting optimization for what is a non-obvious use (in lieu of a proper suggestion for the remaining elements). The nonobviousness of modifying a coolant nozzle based upon Perkins et al is as noted above relative to Ground 4.

Claim 2

Even if proper, the combination would presumably have the Perkins et al. 2-piece structure, not the claim 2 single piece.

**Conclusion**

Each of the claims as set forth above clearly contains allowable subject matter. It is respectfully submitted that these rejections are in error.

Reversal of the rejection of these claims is therefore earnestly solicited.

Appellants request that the fee for any required extension of time (which Appellants hereby request) be charged to Deposit Account No. 21-0279. Please charge any deficiencies or additional fees which may be required hereunder and credit any overpayments to Deposit Account No. 21-0279.

Respectfully submitted,

By 

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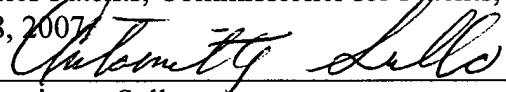
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